

CYBEROPTICS®

# SE ULTRA SERIES

**World-class Accuracy at Fastest Speed**



*High Speed,  
'All-in-one' scan,  
On-the-fly measurement  
@ 210cm<sup>2</sup>/sec*

**3**  
YEAR  
WARRANTY\*



\*On standard parts only (excludes conveyor belts and other consumables); 1 year warranty on service

**FASTEST,  
MOST  
ACCURATE  
3-D SPI**

- **All-new, Ultrafast Sensor** with Calibration-free Design
- **30% Faster** with Unique 'All-in-one' Scan Sequence
- **New, Intuitive Touch Screen Interface** with World-class Usability
- Improved Repeatability with **Dual Illumination Sensor Option**
- **Closed Loop Printer Feedback** Ready
- **CyberPrint OPTIMIZER™** Ready
- **Mounter Feed Forward** Ready

## FASTER, MORE ACCURATE PERFORMANCE

An all-new, ultra-fast sensor combined with a unique 'all-in-one' scan sequence makes the SE500ULTRA 30% faster than its predecessor SPI systems.

Designed and built by CyberOptics, the ULTRA sensor is manufactured as an integrated unit with no moving parts – which means no machine-to-machine variation. Plus, there is no drift, no parts to wear and absolutely no recalibration needed.

For improved repeatability, you can choose from the MicroPad and Dual Illumination sensor options for accurately measuring pads as small as 100 microns (4 mils).



MicroPad Sensor

Dual Illumination Sensor



140 x 140 micron pads



100 x 150 micron pads

## NEW, AWARD-WINNING INTUITIVE SOFTWARE

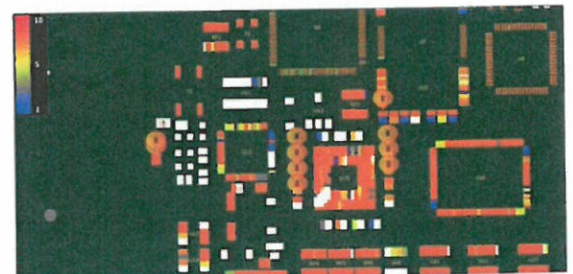
The brand-new V5 series software delivers world-class user experience with its intuitive interface, completely changing the way users interact with our system. Yet, at the same time, the software is extremely stable and simple to use enabling shortest learning curve.

With full multi-touch experience, SPI V5 series software offers a range of revolutionary features that enable smarter and faster inspection:

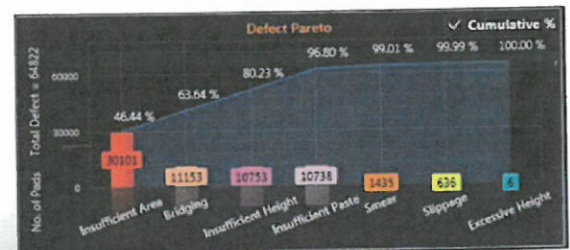
- Seamless integration of all applications - Teach, Inspection, Defect Review and Real-time SPC
- Unlimited undo-redo and global search options in Teach
- Loads of smart, informative and relevant charts that provide yield summary, FPY information, hotspot display, top 10 pad failures, historical panel and more.
- Easy, hassle-free operation using multi-touch, multi-selection, pinch-zoom and pan-move options



Defect Review Interface



Hotspot Display



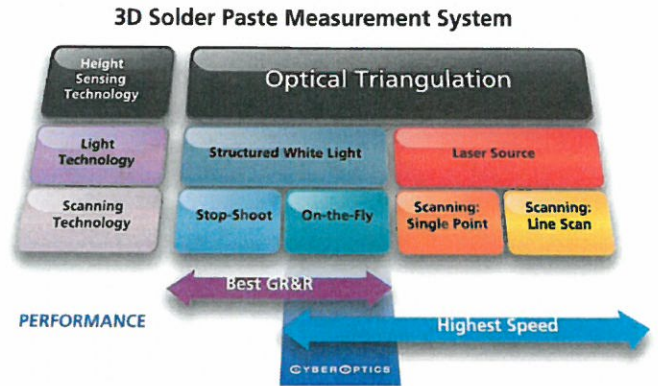
Real-time SPC

# SE ULTRA SERIES

World-class Accuracy at Fastest Speed

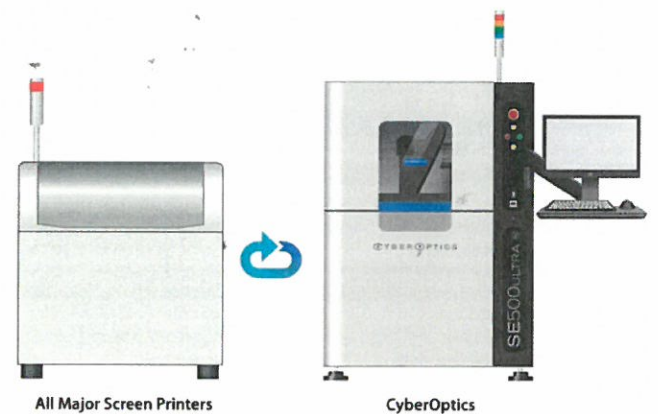
# HIGH SPEED, ON-THE-FLY INSPECTION

SE500ULTRA incorporates CyberOptics' patented 3-D sensing technology that uses white strobe light acquiring full FOVs with each strobe and minimizing vibration effects - delivering good accuracy and consistent repeatability. You can measure ANY PCB surface - including flexible circuits - as white light causes minimum diffusion. With its continuous image acquisition, you can be assured of fast, focused and reliable inspection.



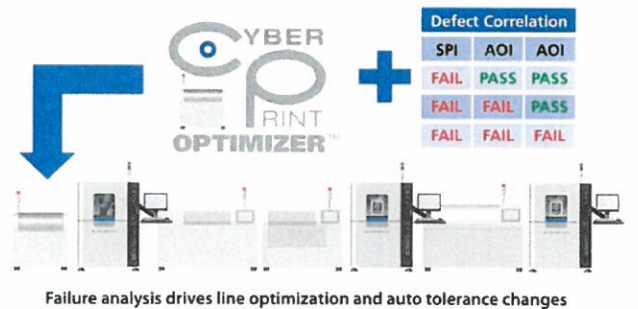
# FEEDBACK, FEED FORWARD READY

SE500ULTRA fully supports feedback and feed forward capability with leading Solder Paste Printer and SMT Mounter vendors respectively. With simple configuration settings, SE500ULTRA gives you the power to do more with SPI results - optimize printing process, establish stencil cleaning cycles and fine-tune printer setup. All this means reduced rework costs, increased production throughput and improved yields.



# CYBERPRINT OPTIMIZER™ READY

CyberPrint OPTIMIZER™ automatically optimizes the print process by proactively analyzing accurate trend data – *first-ever in the industry!* Pre-defined templates help you get started quickly while customizable rules support perfect customization for specific product needs. CyberPrint OPTIMIZER™'s predictive process improvement gets you better yields and reduces downtime.



# SMART PROCESS CONTROL

CyberOptics™ offers a full range of historical data analysis tools with drill-down capability and auto-reporting feature.

## SE500ULTRA™

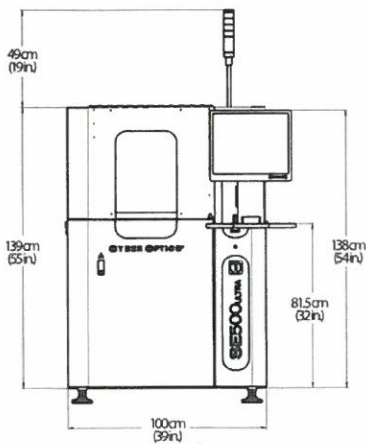
SYSTEM SPECIFICATIONS	
Panel Size Capacity (Max.)	510 x 510 mm (20.0 x 20.0 in.)
Panel Size Capacity (Min.)	50 x 50 mm (2.0 x 2.0 in.)
Dimensions (W x D x H)	100 x 127 x 139 cm
Weight	-855 kg (1885 lbs.)
Maximum Panel Weight	3.0 kg (6.6 lbs.)
Board Thickness	0.3 to 5.0 mm (0.01 to 0.2 in.)
Board Edge Clearance	Top: 2.5 mm (0.10 in.), Bottom: 3.0 mm (0.12 in.)
Component Clearance	Top (above belt): 20.1 mm (0.78 in.), Bottom: 25.4 mm (1.0 in.)
Conveyor Speed Range	150 - 450 mm/sec (5.9 - 17.7 in./sec)
Conveyor Adjustment	Automatic
FUNCTIONAL SPECIFICATIONS	
Maximum Inspection Area	508 x 503 mm (20.0 x 19.8 in.)
Field-of-View	32 x 32 mm (1.26 x 1.26 in.)
X and Y Pixel Size	High Resolution: 15 µm (0.6 mils), High Speed: 30 µm (1.2 mils)
Paste Height Range	50 - 500 µm (2 - 20 mils)
Height Resolution	0.2 µm (0.008 mils)
Maximum Board Warp	<2% of PCB diagonals or a max. of 6.35 mm (0.25 in.) total
Maximum Pad Size in FOV	15 x 15 mm (0.6 x 0.6 in.)
Measurement Types	Height, Area, Volume, Registration, Bridge Detection, Defect Review
Machine Interface	SMEMA, RS232 & Ethernet
Power Requirements	100 - 130/220 - 240 V (±10%), 50/60 Hz, 10 - 15 amps
Compressed Air Requirements	5.6 to 7.0 kgf/cm <sup>2</sup> (80 to 100 psi @ 4 cfm)
PERFORMANCE SPECIFICATIONS	
Inspection Speeds @ 30µm	Up to 210 cm <sup>2</sup> /sec (32.5 in <sup>2</sup> /sec)
Inspection Speed @ 15µm	80 cm <sup>2</sup> /sec (12.3 in <sup>2</sup> /sec)
Fiducial, Barcode and Skip Mark	All-in-one scan
Height Accuracy†	2 µm on a Certification Target
Gage R&R†	<<10%, 6 σ
† Under controlled conditions	
OPTIONS	

SPC Software, Barcode Readers (1D/2D), Programming software: ePM-SPI/AOI & GC-PowerPlace, Offline Defect Review, Certification Target, Dual Illumination Kit

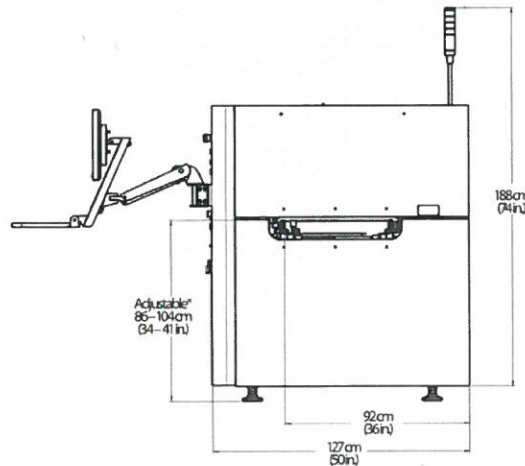


SE500ULTRA

### FRONT



### SIDE



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# SE ULTRA SERIES

World-class Accuracy at Fastest Speed

World's Fastest and Most Accurate 3D SPI

www.cyberoptics.com

Specifications subject to change without notice.

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